HUMAN AD

Heliprops

HELIcopter **PRO**fessional **P**ilots **S**afety Program
Volume 14 ✯ Number 1 ✯ **2002**

SEEING IS A FRAME OF MIND

"I was responding to a nasty automobile accident. One of our patrol cars had been proceeding northbound on a major highway at a high speed in response to an emergency. An elderly couple pulled out of a side road from the east, directly into the path of the patrol car. There was no way to avoid a high-energy collision. The patrol car smashed directly into the driver's side. The elderly driver never had a chance. He was killed on impact. Both cars tumbled into a field on the northeast quadrant of that intersection. The officer and elderly passenger were seriously injured and in need of immediate medical attention.

My helicopter was dispatched to the scene to get these survivors to a hospital emergency room. Upon arrival I was asked to land in the field, close to the two mangled cars. I looked it over and decided that it was not suitable – too small and too many obstacles. I did however determine that the field across the road in the southeast quadrant of the intersection would be OK. It was a large, flat, rectangular field with the long axis running east and west. There were some obstacles around the perimeter, but nothing that would interfere with a normal approach or takeoff. I circled the field doing a recon, and decided the best plan would be to land to the north into the wind. A fireman on the scene positioned himself in the landing field as a target. I was to land directly in front of him. By the way, I was in a 206L and it was daylight VFR. Excellent visibility. The approach and landing were routine. No problem. I shut down and got out to await the arrival

of the two injured. In an instant one of my colleagues came running up to me shouting "Why in the %#@& did you land there"? I didn't know what he was talking about. He pointed up and it was then that I understood. I had landed and shut down immediately beneath a wire that was strung across the field from the northwest corner to the southeast corner. I never saw it, and apparently the fireman who was my target hadn't either. I was astonished. How could I have not seen that wire. I was certain that I was attentive and looking for stuff like this."*

Again, thanks to a reader for contributing this experience.

How indeed can we miss seeing something like this. Something that we are always looking for. Something that is important. Something that can kill us. There are several reasons why. Some are directly related to the capability of the eye itself, others are related to our frame of mind.

The eye is a very complex piece of equipment. The eye itself does not see an object. It is the brain that forms a mental image from the signals received from the eye's sensors. The inside surface of the eye - the retina - is covered with two different kinds of sensors. These sensors, the cones and the rods, have different functions and capabilities. Most aviators have learned about the cones and the rods in relation to night vision. We learned that the cones are concentrated near the focal point, which is the location on the retina where light rays are focused by the lens and iris diaphragm. We learned that the cones provide fine detail and color; but cease to work well at low illumination levels, and have a narrow angle of coverage. A diamond cutter, for instance, is using his cones to the max. He is looking for the tiniest detail and color. Using the cones and focusing on detail is the normal or automatic human mode of seeing - focal vision. Focal vision is where our eyes naturally move their focus from object to object, picking up detail and color.

Much of the remainder of the retina is covered with the rods. These cannot provide much in the way of fine detail or color; but they cover a wide horizontal field of view, and are sensitive to motion through a wide range of illumination levels. These rods provide peripheral vision. The hunter in the wood goes into the "stare" mode to allow his rods to pick up the slightest motion. He is concentrating on, or paying attention to his peripheral vision. Peripheral vision is also a natural way of seeing, just as is focal vision. It was probably developed as a mechanism for survival - a way to detect motion throughout a 180 degree horizontal field-of-view to learn when you are being preyed upon; or to find the prey you are seeking. Peripheral vision might be considered something that comes free. We don't ordinarily think about it, and we don't, without concentration, consciously use it. But even when we look at something for its detail – such as the words on a highway sign – peripheral vision is still there and working. It allows us to keep our automobile on the roadway while reading the sign. Although it's free and we don't normally concentrate on it, you would have a difficult time walking down a flight of stairs without it. Peripheral vision gives us orientation that allows us to walk and chew gum and talk all at the same time. Peripheral vision tells us which way is down, where the walls are, and where the desk and chairs are without having to focus our eyes and thoughts on them. Tunnel vision is an abnormal condition of the eye in which peripheral vision is lost, and one can see only with focal vision. It is like looking through a pair of narrow diameter tubes. With tunnel vision, maintaining orientation becomes difficult, as it requires one to focus on those things that give us a sense of balance (the floor, the walls) and spatial relationship to objects around us (chairs, desks, etc.). Peripheral vision is one of those wonderful features we enjoy but hardly recognize we have it. Peripheral vision, however, can lead us into a trap. It can be the innocent capability that can allow us to miss seeing the very things we are looking for.

There are several physical factors that affect our ability to see objects. Size of the object, distance from the object, level of light illumination, position of the light source, light reflectivity of the object, and the object's contrast with its background are some of the principal factors.

Most of these are obvious. If the object is too small or too far away for the eye's sensors to detect, it cannot be seen. The darker it gets the less you can see. If the sun is at your back the road signs are easy to see and read. When the sun is in your face and positioned just above the road signs, the sign may be impossible to read. If the wire is dull and gray it may be invisible from above on a cloudy day; whereas a smooth and polished wire may be easily seen when reflecting sunlight. A hunter dressed in camouflage clothing may blend into the forest behind; but that same hunter standing on a ridgeline may be seen from miles away. This kind of seeing or not seeing is related directly to the capability of the eye's sensors – physics and physiology.

There are other factors that can interfere with our seeing the objects we are looking for; factors that are not directly related to the capability of the eye to detect these objects. Our frame of mind can influence what we see.

Overload. The brain processes data sequentially. The data comes from our five senses – seeing, hearing, tactile feeling, smelling, and tasting. The sensors for each of these systems accumulate their data separately and each system sends it to the brain simultaneously. The brain however can process the data from these sensors only one-at-a-time, we decide which data we are going to process and when. At any one time we may be concentrating only on the sounds that come through our earphones as the controller reads us a new IFR clearance. Then an instant later shift our visual concentration to the HSI Course display. Followed immediately by trying to identify the source of a burning odor in the cockpit.

The better a pilot is trained, and the more experience he has in completing individual cognitive tasks, the better he is in continuously shifting his attention – and therefore his thoughts – from one item to another. This is multi-tasking. A proficient pilot is adept at multi-tasking – attending to a variety of things simultaneously. He can do so because he has been trained to know when and what data to seek, can process the data quickly, and make rapid decisions on the action to be taken. However, every pilot can reach saturation. He may be faced with more data than he is capable of handling in the time available - an overload. Of course some pilots can handle more than others; but everyone can be overloaded. When a pilot is overloaded he can simply miss seeing something that may be important.

Distraction. Interruptions are notorious for causing fatal distractions. Delta Airlines August 31, 1988 suffered a fatal accident on takeoff at Dallas-Fort Worth. The Boeing 727 crashed at the departure end of the runway because the wing was not configured properly for takeoff. The failure to configure the wing for takeoff was largely due to distractions from the crewmembers themselves, as well as from ground crew and other activities around the aircraft during pushback and taxi. Distractions can cause you to alter your routine. Once a routine such as a Before Takeoff Check is interrupted, it is not unusual for that routine to be totally forgotten, or completed improperly. One can be conscientious in looking for and thinking about things, but a distraction can simply force you to miss seeing something because it was never looked at.

Complacency. A feeling of self-satisfaction with a low awareness of the need for action. If you are comfortable and intimately familiar with a situation - such as flying the same aircraft day after day in the same area - a degree of complacency may set in. Complacency is formed when things become so routine that it is no longer necessary to think much about what you are doing. If the helicopter is the same and it always works fine; if the air tour flight is always over the same route; and if the only difference is the faces on the passengers, then it is natural to become complacent. Complacency may lead to the expectation - the frame of mind - that everything will always be the same. Unfortunately, in our complacent comfort zone, we may not see a change.

Inefficient Attention. A situation in which you are specifically looking for something, the something can easily be seen, you have the time to look; but somehow you miss seeing it. What in the world could that be? There are many examples. Many pilots have embarrassed themselves starting an engine with rotor blades tied down or the rotor brake applied; attempted takeoff with a tie-down still attached; or took flight with cowls or doors open - all AFTER conducting a walk-around preflight check. Of course, the purpose of a preflight check is to look for and to see that the aircraft is configured properly for start/flight. How can someone miss seeing the rotor blades being tied down during a preflight check? More easily than you might expect. It's related to your frame of mind. If during your walk-around your thoughts are on the flight - the passengers, the weather, the ridgeline landing spot - you may miss seeing the very things you are looking for. You may be looking, but not seeing the details; because when you are thinking about something else, your brain may not recognize the detail you are looking at. While at the same time your peripheral vision is perfectly capable of getting you around the helicopter without bumping into the tie-down straps, stepping on the tow bar, or tripping over the tie-downs.

So how can we avoid this trap? How can we assure ourselves that we will see what we are looking at? It may seem too simple, or academic; but it is how we control our frame of mind. We simply must pay attention to what we are doing.

There I Was...

Here are some accounts sent to us by readers.

Medevac

"I was on a night scene medevac bound for a field about 35 miles from my base. I had established radio contact with the medevac dispatcher midway, and they passed me off to the ambulance which had just gotten to the landings site (not collocated with the accident scene). They briefed the medical situation, gave a short brief on the landing site and informed that we would not be able to communicate with the fire truck on scene. First mistake - I did check on why. We were talking to the dispatcher and ambulance on high band FM, the fire truck had only low band. We had just upgraded our radio to handle low band capability, but the dispatcher did not know this and thought we would not be able to talk to the fire truck when in fact we could.

Moments later I arrived at the landing site, which was easily identifiable by the light of the ambulance and fire truck. Both had arrived just moments before. Fire personnel had only flares to mark the LZ and did not want to use them because of dry grass. I made a traffic pattern for landing, trying to communicate with the ambulance during downwind, base and final with no response. Second Mistake – I continued the approach through landing without radio contact. The ambulance was in the process of moving around the opposite side of the fire truck from the landing location in order to avoid the windblast. They considered their air advisory role complete. Consequently the man with radio contact could not see my approach or touchdown while the fire personnel who were in perfect position and ready to perform the advisories did not have radio contact

On landing, unbeknownst to me, I put my tail rotor in a small leafless bush (it was February). I did not have any indications during the rest of the mission but found several creases on the tail rotor blades during postflight. A couple of days and $50,000 later the aircraft was back in the air. I was lucky having learned an expensive but pain free lesson.

In retrospect if I had taken some more time and queried the medevac dispatcher on why they thought I couldn't talk to the fire personnel; or continued my traffic pattern in an orbit above the landing site and not landed until I was talking to someone who could eyeball my approach and landing; or I had insisted on a marked touchdown point this would not have happened. And there was no situational emphasis that would have precluded me from doing so.

Bell 47

"Day one. This was back in

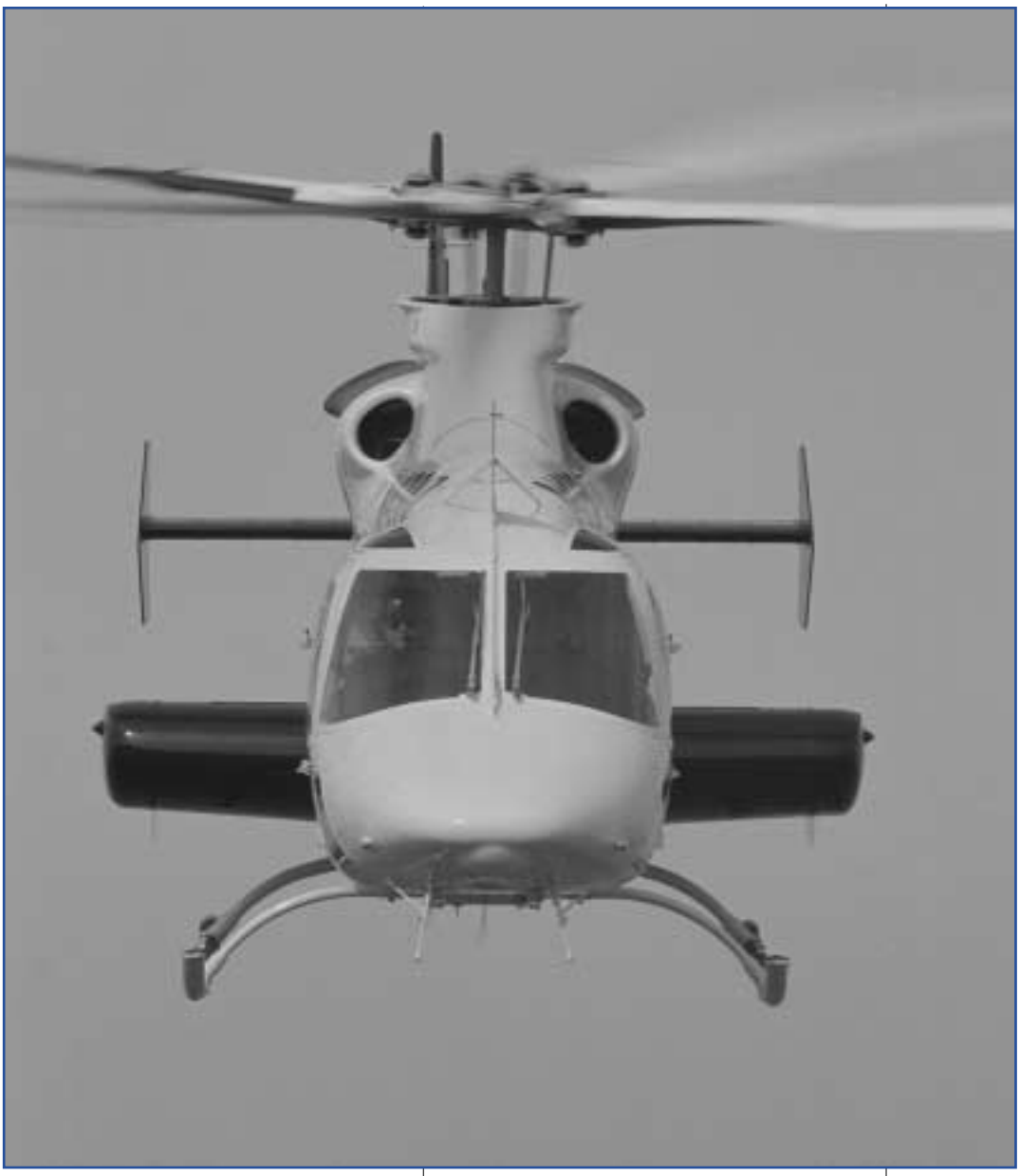
July of 1997. During normal aerial applications I experienced a sudden and sharp descending "jolt" while I was on my way back to the fuel truck. This "jolt" was something that needed to be checked out. I landed and shut it down next to the fuel truck. My mechanic and I gave it a thorough inspection but couldn't find anything wrong. Mechanic said go ahead. I gave it a short test flight and everything seemed fine. There was plenty more work to do so we decided to get at it. I started it up and flew it up onto the top of the truck where we refueled and reloaded. I went back to finish the day's spraying. I made ten more applications, and by the time I shut it down it was dark. I took out a flashlight and again gave the helicopter a good look. Again I could not find anything wrong.

When I arrived at the airport the next morning it was still dark. Did the preflight planning, preflight inspection – again a thorough looksee, cranked it up and took off for the field we would be working. Enroute I had several sharp ratchet noises and jolts. This was bad. I decided I wanted to get this thing on the ground as soon as I could. I radioed the crew to tell them what I planned to do. The sun was approaching the horizon so there was enough light for me to see. I was headed directly for the spot that I had worked out of the previous day. I was almost there and I began a descent. This spot was just a wide spot on a dirt road – there were trees on one side and power line and poles on the other. I put it into a tight left turn intending to make a 360 degree turn to land on the road between the power lines and the paralleling trees. When in the turning descent and approaching the wires, suddenly, and without any other noises or jolts the aircraft began to spin to the right. I pushed in opposite pedal but that didn't help. I knew I wanted to get past the wires to touchdown in the clearing so I kept some power in. The helo was rotating rapidly to the right. When I saw that I was past the wires and at about 50 feet, I lowered the collective. I smacked down vertically, with zero ground speed. I was really hurting. My back was hurt. I struggled to get out of the helicopter and was lying on the dirt. I thought that the battery was still on and that it might be a problem, so I dragged myself back into the helicopter to secure the battery switch.

I definitely had a loss of tail rotor thrust. Inspection of the parts revealed that the failure occurred where the forward male coupling of the tail rotor drive shaft assembly had been operating on the aft third of the mating splines of the forward female coupling. But this was caused by a fracture in a longeron tube on the upper left side of the helicopter's center frame. The fracture was not readily visible due to its position behind the chemical tank mounted on the left side of the fuselage. The fracture had occurred at a weld spot where heavy corrosion and pitting had taken place. When the longeron fractured the entire tail boom twisted and disengaged the tail rotor drive shaft. I had a loss of tail rotor thrust and a whole lot more. I estimate I made from three revolutions above the wires, and four to six more below the wires."

You've got it.

"This was in a 412. We were returning from a medevac. We delivered a patient to a hospital from a scene accident. It was in the middle of the night - about 2:30. The weather was nice.



Clear sky. Lots of stars and a bright moon. I don't remember how many comm radios we had in that aircraft maybe as many as five – it could get very congested when several of them were active. I was an inexperienced pilot in the left seat. The PIC had done all the flying until when we were headed back home. I expected to fly the aircraft. The PIC said "Any time you want the controls you can go ahead." He apparently thought I had the controls but I did not. When the aircraft got to about a 25 degree right bank he asked if I have it. I then got on the controls and straightened it out. For a while there neither one of us was on the controls."

Backing down.

"This was in the Gulf of Mexico some time ago. I was flying a 206BIII to a Jack-up-Rig. Wind was from the north – ten to twenty knots and gusting. I couldn't land directly into the wind because of the position of the legs of the rig. I approached with a crosswind that would occasionally shift into a quartering tailwind. I arrived over the deck and made a pedal turn and set down with the wind on my tail. When I was ready for takeoff I saw that I was in a tough spot. I couldn't takeoff straight ahead, and there were too many obstructions for me to make a hovering turn to face back into the wind. I had only one passenger and some cargo, so I knew I was not at max gross weight. I thought performance would not be a problem. By the way, the deck of this rig was approximately 75 feet above the surface of the water. I decided the only way out was to back off the rig into that quartering tailwind. When I was moving backward and got the horizontal stabilizer past the edge of the deck, the tailwind blew the tail up and I was looking down toward the water and the legs of the rig. I made a quick right pedal turn (I guess you could call it a pirouette) into the wind and slid into a takeoff. I made it but it sure got my attention. I learned that winds can do funny things when they burble over obstructions like a rig. I also learned that the horizontal stabilizer may not be very big, but it sure can have a powerful effect when you try to fly it backwards."

Density Altitude.

One subject that gets little attention is density altitude. Perhaps because many pilots do not know enough about the subject. Yet, because of the inescapable influence density altitude has on aircraft and engine performance, it is important for every pilot to understand its effects. Hot, high, and humid weather conditions can change a routine takeoff or landing into an accident in less time than it takes to tell about it. There are three important factors that affect density altitude.

1. Altitude. The higher the altitude the less dense the air.

2. Temperature. The warmer the air, the less dense it is.

3. Humidity. As the relative humidity increases the density of the air decreases, resulting in a reduction in aircraft and engine perfrormance.

The Pilot's Operating Handbooks prepared by the Airframe Manufacturers provide good information regarding the aircraft performance. However, if a pilot becomes complacent regarding aircraft performance or is careless in using the charts, the density altitude effects may provide an unexpected element of suspense during takeoff and climb.

Density altitude effects are not confined to mountain areas. They apply at all elevations when temperatures go above standard. It's just that the effects are increasingly dramatic at the higher elevations.

Takeoff distance, power available, climb rate, and hover in/out of ground effect are all adversely affected with increases in density altitude.

Density altitude is not to be confused with pressure altitude, indicated altitude, true altitude or absolute altitude, and is not to be used as a height reference.

When the temperature rises, the density of the air in that locality is reduced and the density altitude increases. This affects the aircraft aerodynamic performance, and decreases the output of the engine. Pilots should make a practice of checking their aircraft performance charts during preflight preparation. This is important when temperatures are above normal regardless of airport elevation; but is especially so for high altitude operations.

The Table below shows the significant affects of temperature on density altitude. It shows standard temperatures at sea level, 4000 feet, and 8000 feet elevation. When the temperature rises to 90 degrees F the density altitude at sea level increases to 1900 feet, and at 8000 feet elevation it increases to 11,700 feet.

STD TEMP	ELEVATION	80° F	90° F
59° F	Sea Level	1,200 FT	1,900 FT
45° F	4,000	6,300 FT	6,900 FT
31° F	8,000 feet	11,100 FT	11,700 FT

An increase in density altitude has the following adverse effects::

1. Increased takeoff distance.

2. Reduced rate of climb.

3. Increased true airspeed on approach and landing at the same indicated airspeed.

4. Decreased max gross hover weights.

At airports of higher elevations, such as those in the Western United States and throughout Central and South America, high temperatures sometimes have such an effect on density altitude that safe operations are questionable. In such conditions, operations during the hot afternoon can be hazardous. Even at lower altitudes, aircraft performance can become marginal and it may be necessary to reduce aircraft gross weight for safe operations.

A pilot's first reference for aircraft performance should be the operational data section of the Rotorcraft Flight Manual developed by the manufacturer. When performance is in question, one option may be to schedule flight operations during the time of day when the temperature is less extreme. But not everyone has the luxury of choosing an optimal schedule.

When you must conduct operations from, or are flying to, a high temperature/high density altitude location, how do you determine that your helicopter has adequate performance? Do you load it up and go, hoping that everything will be OK. Do you load it up and go expecting your superior piloting to make it work or to get you out of it if it doesn't? Do you load it up and go because the last time it was OK? If you rely on your hopes or previous successful experiences you may be in for a rude surprise. You may not be able to hover either in or out of ground effect when you arrive at that ridgeline landing spot. You may run out of power, lose rotor RPM and tail rotor effectiveness, control, and altitude all at the same time.

How then do you assure yourself that you will not have one of these surprises? You do what your mother would tell you to do – check the flight manual performance charts. Whatever charts are necessary (HIGE, HOGE, Critical Wind Azimuth, Rate of Climb, etc.) to assure yourself that the helicopter is capable of doing what you want to do.

Modified from FAA –P-8740

YOUR ANSWERS. . . . .

In our last issue we asked asked "Have you ever missed something on a preflight check? Tell us about it. Were you or someone else able to catch it before it caused a problem; or did it result in some difficulty or damage?"

Human AD.

"Completed preflight. Entered cockpit. Fastened seatbelt. Rolled throttle to start. Began starting engine. Main rotor blades did not turn. Aborted start. Got out to discover blades still tied down. How could that happen? I just preflighted the helicopter."

"It snowed the night before. The helicopter had been out on the ramp and had a coat of snow – less than an inch. I brushed it off, got in and started it up. On climbout the engine flamed out. I was still over the taxiway so it was an uneventful touchdown and a bit of slide. No problem, and absolutely no damage. This 206 did not have a particle separator. The flameout was due to ingestion of a clump of snow that had accumulated in the area in front of the engine intake. The not so funny part is that moments after I touched down one of my mechanics saw what was steam rising from the engine area and he yelled "Fire." I wasted no time in releasing the seat belt, opening the door, and jumping out. Unfortunately my microphone cord was still plugged in, and it jerked my head backward as the rest of me kept going forward. Wham. I landed hard on my back".

"The aircraft had just come out of the paint shed. It was painted in a desert camouflage paint scheme. Normal preflight check. Just after takeoff I smelled something burning – a woodsy kind of smell. Came back around, landed and shutdown. Found the remains of a wooden handle screwdriver near the engine exhaust. The wood on the handle had almost all been burned away. The color of the wood blended in against the aircraft's camouflage colors, and I never saw it on preflight."

"I was to bring this helicopter back to my company. I had never seen or flown it before. This aircraft looked like it had been ridden hard by its previous owner, so I was intent on giving it a thorough preflight check. I climbed up on the roof to look at the head, blades, and top of the transmission. When I looked over the top edge of the cowl, just inches from my face, was the complete skeleton of a cat. With its face looking directly at me. The sight startled me, and I snapped my head back – directly into sharp contact with one of the blade grips. Ouch! I put a nice gash on the top of my head from which poured an amazing trickle of blood."

"I was to pick up a 412 from a maintenance shop. Did a quick preflight for the very short flight back to my base. After shutting down at my place the mechanics discovered a nearly full gallon can of solvent (with no cap) in the combining gearbox compartment."

"An Army pilot and I had been helping the technicians with the task of working the rotor and proving a Chadwick system on an OH-58. Between runups the pilot and I were off to the side smokin' and jokin'. One of the mechanics went off somewhere to get another part or tool. Then another mech came over and told us he was ready for us to run it up again. We did. The only problem was that we never looked at a thing, and the loose pieces and parts and tools that the first mech left up on the rotor were quickly slung about. Luckily none of them hit or hurt anybody."

"This 430 had just come out of some extensive mod work. It deserved a close look on preflight and that's precisely what I gave it. On climbout I discovered that I could not move the cyclic stick to the left. Right turns back around to land. The problem was an improperly installed doghouse cowl clamp that interfered with the cyclic boost actuator. I never noticed it during my preflight."

"Another pilot was ready to start his helicopter parked next to mine. I had already finished my preflight, and rushed my prestart checks to beat him to the start (and avoid flapping blades), but before I could start he looked at me and pointed to the top of my aircraft. I had left the inlet covers on. The rush made me miss them."

"Along with the career usuals "almost" forgot to untie blades, check a gas cap is closed, etc. The cooling shroud for a Bell 47 was not fastened after an inspection. It was discovered during preflight. It very easily could have come in contact with the cooling fan blades at major expense or trouble."

"I was flying MEDEVAC UH-60's for the Army. We would preflight at the beginning of the shift and then reinstall the pitot covers on the aircraft to prevent contamination. Later in the day we took off on a mission with one of two covers still installed. As the aircraft accelerated, we received a warning for the stabilator system failure. We were able to pull the cover off in flight (via the "Remove Before Flight" strap which was dangling in the cockpit threaded between the door and the frame. I could pull the strap but couldn't get the cover through the gap between the door and the frame) and got to spend the next 30 minutes listening to it flap against the side of the aircraft."

"Once during the winter, when a rare freezing rain was forecast down here on the Gulf Coast, maintenance was ordered to put inlet, exhaust and pitot covers on all the aircraft. I was flying an AS350D at the time, and I did a quick preflight the next morning in the cold, and removed all the covers I saw. A few minutes after takeoff, flying a load of groceries, I noticed that I had no airspeed indicated. I continued to my destination platform, and told the customer I would shut down to unload the groceries. After I shut down, I looked under the belly, where the pitot tube was. Sure enough, maintenance had put a cover on it. Not having a real pitot cover, they improvised with a small plastic bag, held in place by rubber bands and I really had to look closely to see it. Flying without airspeed indications wasn't difficult, I just flew power and attitude, but it made me inspect things a little more closely thereafter, wondering what new parts the mechanics could come up with."

"I was conducting flight training in my unit AH-1G's. We had been assigned an aircraft and completed the prelight inspection, buttoned up the aircraft and proceeded to operations to file a flight plan. We returned to the aircraft and I noticed that two rear engine cowling latches were popped. I was curious about this.

I checked the aircraft's logbook to see if maintenance had been doing some work on the aircraft. Nope, nothing was written up in the logbook. Still I was sure that we had secured all the latches. Curiosity got the better of me, along with that little sixth sense that gets you. I opened the cowling and found that part of the fuel control had been removed without a logbook entry, and of course … someone had gotten the wrong tail number. We wouldn't have gotten the aircraft started, but would have been able to roast hot dogs from the fire.

Then there was the time I was distracted on a night preflight and left a flashlight on top of the aircraft. The off-going pilot saw it while walking up to the aircraft to retrieve his equipment and told me about it. It's a good thing we all work together. One last thing - a "Final Walk Around" will really keep you out of trouble."

"Several years ago I was in a Bell ground school with seven or eight other pilots. At the time I was the only pilot in our organization that was not rotor-wing rated. At one point we were doing a hands-on preflight check of a Bell 206. There was a ladder propped up to the opened engine compartment and we were taking turns climbing up the ladder and looking at all that important stuff. I didn't recognize anything until I spotted a large pair of pliers laying on the engine deck. Having been the last in line behind seven or eight helicopter pilots my first thought was that this must be normal since nobody else said anything about them. I picked them up and turned to the other guys and said "What about this?" The pilot had just flown this ship about 200 miles to the school. He took the pliers and said "I'll add that to my toolbox." I'm sure he made sure his maintenance facility stood a chance to lose more than a pair of pliers. I'm sure there's a lesson in complacency here somewhere."

OVER THE COUNTER MEDICATIONS.

When you treat yourself with non-prescription medication, you become your own doctor and pharmacist. Therefore, you must inform yourself of the possible adverse reactions that you might encounter. The following will help you understand some of the basics that you will need to successfully accomplish this task.

Over-the-counter medications (OTCs) are any legal, non-prescription substance taken for the relief of discomforting symptoms. This may include capsules, tablets, powders, or liquids.

When you are not feeling well, your best action is to ground yourself and wait until you have recovered before resuming your pilot duties. There may be times, however, when you feel that you must fly and will be tempted to doctor yourself with OTCs. At these times it is good to remember that the OTCs only hide your symptoms for a while. They do not usually "cure" the condition, and you will not be at peak physical performance while you fly.

There are two main areas of concern about unwanted reactions to medications.

Possible Allergy. If you know you are allergic to something, you should carefully read the list of ingredients of any OTC to assure that none of the substance is included in the formulation.

Unwanted Side-effects. These can take many forms, including drowsiness, impairment of judgment, upset stomach or bowels, disturbance of vision, or even itching. Any of these could cause incapacitation while flying. Decongestants and caffeine are both strong stimulants in some individuals. Mixed together, they can make you "hyperactive."

This table lists the common OTCs and outlines some of their possible side-effects that could affect your flying abilities. As with all drugs, side-effects may vary with the individual, and with changes in altitude and other flight conditions.

MOST COMMONLY-EXPERIENCED SIDE EFFECTS AND INTERACTIONS OF OTC MEDICATIONS

	MEDICATIONS	SIDE-EFFECTS	INTERACTIONS
PAIN RELIEF/ FEVER	**ASPIRIN** Alka-Seltzer Bayer Aspirin Bufferin	Ringing in ears, nausea, stomach ulceration, hyperventilation	Increase effect of blood thinners
	ACETAMINOPHEN Tylenol	Liver toxicity (*in large doses*)	
	IBUPROFEN Advil Motrin Nuprin	Upset stomach, dizziness, rash, itching	Increase effect of blood thinners
COLDS/FLU	**ANTIHISTAMINES** Actifed, Benadryl, Cheracol-Plus, Chlortrimeton, Contac, Dimetapp, Dristan, Drixoral, Nyquil, Sinarest, Sinutab	Sedation, dizziness, rash, impairment of coordination, upset stomach, thickening of bronchial secretions, blurring of vision	Increase sedative effects of other medications
	DECONGESTANTS Afrin Nasal Spray Sine-Aid Sudafed	Excessive stimulation, dizziness, difficulty with urination, palpitations	Aggravate high blood pressure, heart disease, and prostate problems
	COUGH SUPPRESSANTS Benylin Robitussin CF/DM Vicks Formula 44	Drowsiness, blurred vision, difficulty with urination, upset stomach	Increase sedative effects of other medications
BOWEL PREPARATIONS	**LAXATIVES** Correctol Ex-Lax	Unexpected bowel activity at altitude, rectal itching	
	ANTI-DIARRHEALS Imodium A-D Pepto-Bismol	Drowsiness, depression, blurred vision (*See Aspirin*)	
APPETITE SUPPRESSANTS	Acutrim Dexatrim	Excessive stimulation, dizziness, palpitations, headaches	Increase stimulatory effects of decongestants, interfere with high blood pressure medications
SLEEPING AIDS	Nytol Sominex	(*Contain antihistamine*) Prolonged drowsiness, blurred vision	Cause excessive drowsiness when used with alcohol
STIMULANTS	**CAFFEINE** Coffee, tea, cola, chocolate	Excessive stimulation, tremors, palpitations, headache	Interfere with high blood pressure medications

Adapted from FAA Pamphlet AM-400-92/1

WHAT'S YOUR ANSWER ?

QUESTION:

"What individual flight do you consider to have been your most rewarding?"

_____

_____

_____

_____

_____

Mail your ANSWERS to: Bell Helicopter Textron, Inc.
Jim Szymanski
HELIPROPS Manager
P.O. Box 482
Fort Worth, Texas 76101

or e-mail:
jszymanski@bellhelicopter.textron.com

Yes!

I would like to receive my own copy of the HELIPROPS newsletter - ***THE HUMAN AD***.

Heliprops

Please complete this coupon and return to the address below.

Name _____ Title _____

Company _____

Address _____

City _____ State _____

Zip _____ Country _____

Volume 14 Number 1

The HELIPROPS ***HUMAN AD*** is published by the Customer Training Academy, Bell Helicopter Textron Incorporated, and is distributed free of charge to helicopter operators, owners, flight department managers and pilots. The contents do not necessarily reflect official policy and unless stated, should not be construed as regulations or directives.

The primary objective of the HELIPROPS program and the ***HUMAN AD*** is to help reduce human error related accidents. This newsletter stresses professionalism, safety and good aeronautical decision-making.

Letters with constructive comments and suggestions are invited. Correspondents should provide name, address and telephone number to:

Bell Helicopter Textron, Inc.
Jim Szymanski
HELIPROPS Manager
P.O. Box 482
Fort Worth, Texas 76101

HUMAN AD Heliprops

or e-mail: jszymanski@bellhelicopter.textron.com